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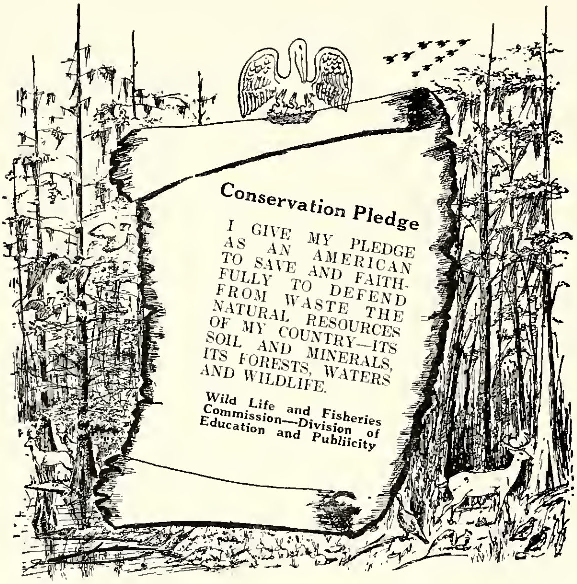

Conservation Pledge

I GIVE MY PLEDGE AS AN AMERICAN TO SAVE AND FAITHFULLY TO DEFEND FROM WASTE THE NATURAL RESOURCES OF MY COUNTRY—ITS SOIL AND MINERALS, ITS FORESTS, WATERS AND WILDLIFE.

Wild Life and Fisheries Commission—Division of Education and Publiicity

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Vol. 11, No. 12

EDITORIAL

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COVER

NUTRIA TOPPER

By RUDOLPH EASTERLY, *Director*

Louisiana Wild Life and Fisheries Commission

RUDOLPH EASTERLY

THERE IS AN OLD SAYING that "figures don't lie" and if this be true the 25,000 hunting efforts expended by sportsmen on game management areas of the Louisiana Wild Life and Fisheries Commission over seven-day periods at the opening of the hunting season are ample proof that Louisiana is badly in need of acquiring more public domain to be converted into recreational areas for our growing hunter population.

This publication has, in the past, preached the necessity for the acquiring of lands to meet the growing needs of our rapidly expanding populations. We have, in the past, appealed to Louisiana legislators to find means of making funds available for this purpose and we will continue to do so with redoubled efforts in light of a recent development which deprived the public of one of its shooting and recreational grounds.

By the above we refer to the acquisition of the commission's Caldwell Game Management area, in Caldwell parish, by private interests and we assure you that there will be no 25,000 hunts on these grounds by the public. The loss of this area may be traced to the pure and simple fact that the commission does not have the funds with which to lease additional lands. Unless the legislature sees fit to appropriate necessary funds for land acquisition, other lands will go to private interests and will not be available for public shooting.

More and more private clubs and camps are being organized throughout our state and nation for the acquisition of hunting grounds which will be open only to the select few and unless we wish to get left out in the cold and be faced with the necessity of raking over what is left of the least desirable lands it is time we get after our solons to wake up.

However, we in Louisiana are not the only people faced with this dilemma and we have the backing of conservation groups throughout the nation who are constantly calling to the attention of their own groups the dire situation which all conservation agencies face.

We have spoken before of the shrinkage of our public domain through the encroachment of civilization, industry and explosive human populations. Of how the human race is overrunning the earth and of how demands upon each acre of land are mounting steadily.

On this subject we quote Professor Ian McTaggart-Cowan of the University of British Columbia, who aptly puts the situation this way: "One of the greatest social problems facing us is designing a multiple use that will yield for every person a higher standard of living while at the same time preserving the resource base upon which living depends. We cannot envision a high living standard in a world stripped of its natural beauty, in a continent bereft of its wildlife species and in which it is no longer possible for a citizen to take his outdoor recreations.

Over the last ten years, there has been a lot of lakeside and other wildlife land alienated by private purchase, restricting public access. There have been new thousands added to the growing army of hunters and fishermen who patronize the easily reached forests and streams. This inevitably means that the individual share of the bag is smaller and more difficult to get."

So this is what our neighbors think. Now we ask, "Does the situation not apply here in Louisiana?" Because of the fact that our immediate personal interests are not involved do we not shunt the responsibility for action off on the other fellow? We have done a great deal with the management of what areas we have. But we are losing ground in the larger picture as the incident of the Caldwell Game Management would indicate.

LOUISIANA FUR OUTLOOK

This nutria trapper has bagged 150 of the animals which will mean to him as many dollars for pelts plus the fact that he is bringing the carcasses in for sale to mink ranchers and pet food canners.

Ednard Waldo

NUTRIA TRAPPERS in Louisiana may enjoy an unusually good season in 1959-60 provided there is a long spell of cold weather plus some other other attending circumstances, according to Ted O'Neil, chief of the Fur Division of the Louisiana Wild Life and Fisheries Commission.

O'Neil, author of the "Muskrat in the Louisiana Coastal Marshes" which is a study of the ecological, geological, biological, tidal, and climatic factors governing the production and management of the muskrat in Louisiana, has also spent many years studying the nutria in its habitat since it was introduced into this country three decades ago from South America.

The cold weather, which will be a factor in the quality of the pelts taken, will likewise have a bearing on the saleability of the nutria meats. Last year, O'Neil rightly predicted that the trapper's income would be enhanced through the sale of the nutria carcasses to mink ranchers who were clamoring for them. The cold weather, he says, will enable the trappers to deliver the meats to refrigeration trucks and plants and in good condition for preservation, sale, and shipment to the mink ranchers in the north and the west.

One of the reasons for the demand is because of the shrinkage of the supplies of wild horses on the planes who have been taken for mink and pet food.

Hunters sometimes even pursued the animals by airplane and slaughtered them from the air, supplying the carcasses to packing plants. "We have no quarrel with the wild horse meat hunters. There just isn't much more of this commodity," O'Neil says.

With the shrinkage of the wild horse meat market, pet food canners and mink ranchers have turned to their next most plentiful meat supply which is the nutria, and which has been found to be high in proteins and more desirable as an ingredient in the diets of animals than any yet found.

He stated that last year, dog food canners made numerous laboratory tests which substantiated the nutria's high nutritive and protein value. Field tests also demonstrated that because of some unknown subtle odor or flavor imperceptible to man, dogs and cats simply "went for" the food with the nutria meat ingredient.

In spite of the fact that there was much spoilage in getting the meat to the markets last year (this was a "bug" in the new industry that had to be normally ironed out) trappers delivered two million pounds of marketable meat which was swallowed up by the consumers. And as O'Neil predicted last year, trappers enhanced their trapping incomes by delivering the nutria carcasses to waiting refrigerated trucks. At an average of three to four cents a pound for nutria carcasses weighing dressed, an average of five pounds, trappers were able to substantially add to their earnings. Throwing the carcasses away after skinning and leaving them on the marsh as had been done heretofore would have been to the trapper like forfeiting two bits every time he caught an animal.

Further income this year from nutria trapping may be realized if trappers will salvage the carcasses of the animals that are caught, and whose pelts are unsaleable. By unsaleable, we mean those animals found in the traps which are undersized, or whose pelts have been damaged by accidents, in conflict with other animals, or have other defects which make them undesirable for the fur market, and not worth the labor of skinning and curing.

As to what could have been realized monetarily by the trappers from the carcasses of the discarded nutria he points to the fact that about one-half of those animals taken in the traps are thrown away as undesirable. "Now, last year, we know that about two million pounds of meat was sold by the trappers. Had they brought in the meat from the discarded nutria, trappers would have possibly doubled this figure, and this isn't hay!" O'Neil stated.

He predicts that the state may double its productivity of nutria meat, provided the weather is favorable this season. "The consumers should have by now learned from their experience of last year that slip-shod methods of harvesting the carcasses cause great loss. It takes people with the know how, who handle seafood and perishables, to do the job and I think consumers this year will be aware of this fact, and go into the field well prepared," he says.

Another element that is a good omen for the nutria trapper is that some of the leading producers of stylish furs have come to realize the beauty of the nutria pelt and are now advertising their latest creations done in nutria fur. For many years the bargain-wise Europeans have been well aware of the value of Louisiana nutria fur, not only from the standpoint of beauty but also from the standpoint of durability. In this latter qualification, nutria is almost unrivalled among the top furs of the world and this is perhaps why very few of the thousands of nutria pelts shipped abroad every year ever return to this country in the form of coats and other garments, O'Neil says.

Besides the fact that they are attempting to popularize the nutria, the producers of coats and furs are down to the bottom of the barrel when it comes to stocks of raw furs. Practically all of their inventories have by now been converted into money and it's a selling market now for the trapper.

Concerning the muskrat situation, O'Neil looks upon pelt production this season with a jaundiced eye. "Everyone knows about the explosive population of nutria and whereas nutria do not actually engage in physical combat with the muskrat, their voracious consumption of food grasses and roots causes ecological changes in the marshes.

In brief, whereas the nutria do not necessarily destroy the food of the muskrat, they destroy certain roots and grasses which protect the muskrat range thus allowing the ebb and flow of the tides to cause the flow of marsh water to fluctuate. These bring about ecological changes unfavorable to the growth of muskrat food grasses. This factor coupled with man's marsh activities, such as drainage canals and the like, have brought drastic alterations in the domain of the muskrat.

In the circle is seen Mr. Nutria in his natural habitat on the marsh. Almost half million were taken by trappers last season.

It takes two skinners to keep up with one nutria trapper now that both the pelts and carcasses are being brought to market.

A further cause of the reduction of the muskrat population by the nutria is the fact that nutria are prone to congregate atop the muskrat nests which are in the shape of mounds above the marsh. "The weight of these fifteen- to twenty-pound animals when congregated above the nest causes it to collapse and the mother abandons her young to die, and seeks to build another nest wherein to reproduce again, if she does at all," O'Neil says.

As for the mink situation O'Neil sees fair prices for the trappers. "The reason for the steady demand for wild mink furs is primarily due to the steady advertising and promotional work which is being and has been conducted by mink ranchers during the past decade. This promotional effort has kept up the demand for mink and has inadvertently helped the wild mink farmer and also the State of Louisiana who are cashing in on this promotional work without effort or outlay of money at all."

"The 'farm boy' trapper will again realize a steady profit from the sale of raccoon furs, hides and meats this season. In fact, in the past few years, in the northern part of the state, raccoon meat for human consumption has been more profitable to the farmer than the hides."

Besides the demand for the 'coon' meat, which is considered a delicacy, the cloak trade has consumed practically all of the stocks of raccoon for coat trimming. Coons are in abundance this year and the farm boy should have a good season.

The following table for prices to the trapper and fur take in Louisiana for the 1958-59 season which the commission's Fur division has compiled is shown below. It could be a forecast for this season's prices if all factors proceed normally, O'Neil says.

Pelt	*Amount*	*Price per Pelt*
Muskrat	1,302,606	$ .80
Mink	88,365	8.00
Raccoon	68,139	1.00
Otter	5,160	14.00
Nutria	461,311	1.00 to 2.50
Opossum	3,660	.10
Fox	33	.25
Skunk	623	.15
Cat	126	.25

Winter At The Chandeleurs

The author, Percy Viosca, Jr., left, is seen with crew off the Chandeleur islands, examining specimens of winter marine life. Studies such as these are conducted constantly.

Percy Viosca, Jr.
Marine Biologist

In the good old Summertime, when water temperatures hover around the 85 degree mark, the nearest approach to a tropical marine environment in Louisiana is the area around the beautiful Chandeleur Islands. A trip to this easternmost possession of the state of Louisiana is a revelation to fisherman, biologist, skin-diver, or boatman. The crystal clear water around these barrier bars of clean white sand are a contrast to the turbid waters which Louisianans take for granted.

In winter, when northwesters strike in behind the islands, the water temperature drops to 50 degrees and lower, cold enough to bring about drastic changes in the plant and animal life, especially the more tropical types. At this season there is practically no diffusion of light from tiny plankton organisms, so the bottom seems to stare at you as if you were sailing on a sea of air, and you can observe the marine life clearly from the deck of a boat or through a glass-bottom bucket, when skin-diving is out because of the cold.

In cold weather, too, I do not recommend jumping

A view of the Chandeleur islands in the wintertime. Wild Life and Fisheries Commission scientists may be seen in the background gathering specimens for study. Waters around the islands teem with marine life and new discoveries are constantly being made.

overboard in shallow water, for it is much deeper than you think, doubly so because of a law of physics which states that light refraction increases as the water temperature is lowered and also as the salinity increases. If you insist on wading, measure the depth with a stick, for this is consistently the saltiest water along our coastline. As for swimming or diving in proper season, the salt so smarts the eyes that 30 minutes is about the limit without goggles.

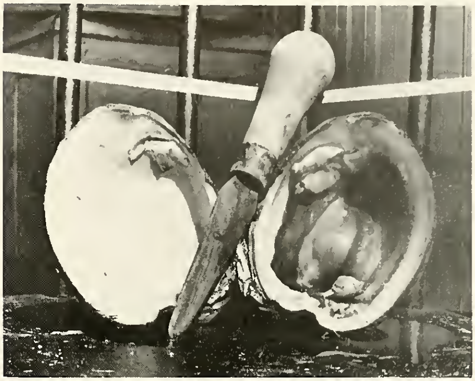
In spite of our previous experiences, the depth of the water fooled me and my two biological aids, Myles A. Patureau and Ronald A. Barrett, as the good ship "Halfbeak" approached the sand flats near the lighthouse at the north end of the big island. Marine money, in the form of sand dollars, lay all over the bottom, as if scattered from a rotted treasure chest, yet, when Ronnie reached down with a seven foot net, he couldn't touch a penny's worth. When Myles and Ronnie put the dredges over to explore the bottom, we could see these devices operating in twenty feet of water.

This old photograph, taken in 1925, shows that wildlife biologists were after specimens on the island more than a quarter of a century ago. This crew was led by the famed Dr. Robert Glenk (third from left) founder of the Louisiana State Museum.

Sand flats facing the northwest were heavily rippled, no doubt from a severe storm that had preceded our expedition. This made the tracks and "diggins" of bottom organisms startling by contrast. The numerous sand dollars, which creep just below the bottom with only their breathing pores exposed, had already ploughed intricate curvaceous patterns across the fresh ripple marks, indicating activity in spite of the cold. In heavy beds of sand dollars, the ripple marks were sometimes completely obliterated.

The presence of marine worms and clams beneath the sand was evident as miniature volcano-like cones from which sand-bearing water squirted with each "eruption". Other "diggins" stood out clearly too: the tracks of hermit crabs and snails, the beds of rays and flounders, and some we could not name, perhaps made by feeding crabs or fish.

Some few sand dollars in every colony were topsy-turvey and apparently unable to right themselves. Was this the result of the recent storm or to the feeding of fish or bottom animals? Will the next swift tidal current, or perhaps some bulldozer of the sea bottom such as a conch or horseshoe crab, turn them back to normal position? We have often wondered how these sand dollars live on the bottom; now we know, but many new questions have injected themselves. Are these purely academic, or will the answers be of practical value to the fisheries which feed our nation, or any part thereof?



This large edible clam has been opened to expose the meat. Note the tape measure which reads 10 inches indicating the clam was five inches across each shell.

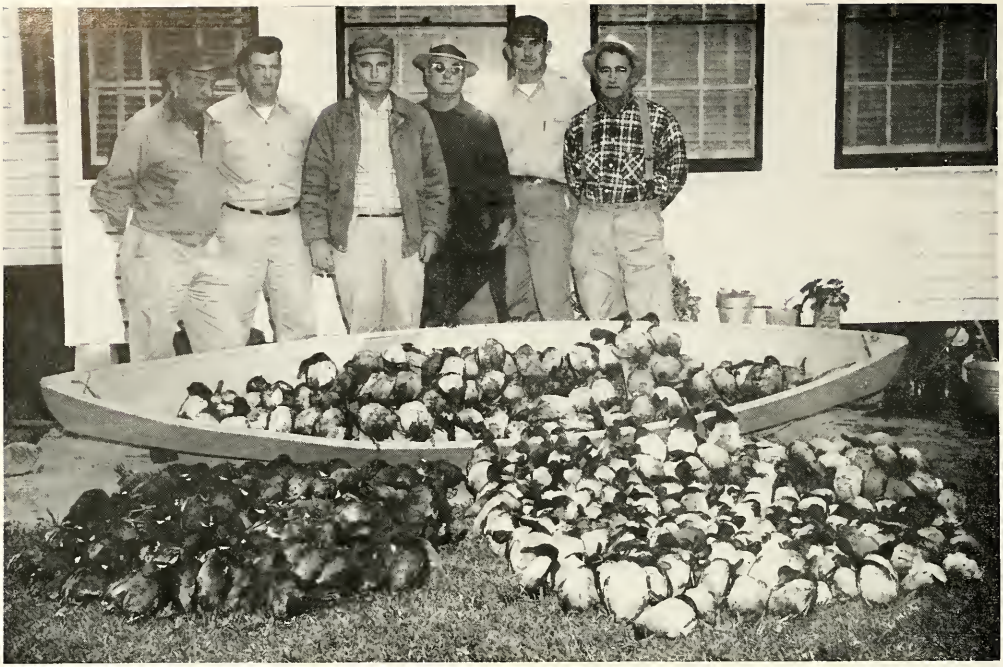
Many other creatures inhabited the sand flats—sand stars, brittle stars, sea mice, horseshoe crabs and olive snails—curiosities even to those familiar with other parts of the Louisiana coast. Small fish darted to and fro, but speed and camouflage rendered identification impossible, except for the trunkfish which moves in slow-motion.

Some long, flat, marine worms, a foot or more in length, were engaged in fantastic gyrations near the surface of the water. We scooped up a few and placed them in glass bowls, only to see them break up into smaller segments, like a freight train switching boxcars. To our surprise, the junior parts squirmed away as full-fledged individuals. What a way to multiply!

We visited the submarine gardens which had been so in evidence on previous expeditions to the islands

A common form of marine life encountered in the waters of the Chandeleurs is this large edible clam. Note how it compares in size with the lady's hand.

(Continued on Page 16)



One of the largest hauls of illegally possessed ducks and coots was made by law enforcement agents of the Louisiana Wildlife and Fisheries Commission in cooperation with U. S. operatives. Agents making the seizure are (left to right) Federal Agent Jack Bates; State Agents Lloyd Songe and Ulysse Ougel, Federal Agents Lodgar Duet and Fred Williams and State Agent Billy Ranson. The birds will be given to charitable institutions.

Agents Nab Waterfowl Hogs

Game agents of the law enforcement division of the Louisiana Wild Life and Fisheries Commission, in cooperation with federal game agents, have reported one of the largest seizures of illegal ducks and coots recorded in recent history, according to Captain Julius Book, chief of the division.

The seizure and arrest of the 19 men for the illegal possession of 376 waterfowl was the largest since two seasons ago when Book and federal men swooped down on a yacht, off Chandeleur Islands, by plane and boat, and apprehended 11 Alabama and Texas men with 188 illegally taken birds.

Eight of the nineteen men were arrested in Lafourche parish at the Dufrene club near Des Allemands and the Sphar Commercial Hunting club. Eleven of the other hunters were taken at the Waggaman Pond Commercial hunting club in Jefferson parish.

Names of the hunters were withheld pending filing of charges with the office of J. Hepburn Many, U. S. Attorney at New Orleans, Book said.

Fred A. Williams, U. S. Agent, said, "We are making a concerted effort to stamp out the widespread practice of a small number of hunters disregarding the legal bag limits. We will continue to check the hunters."

Participating in the seizure, which was a cooperative effort between state and federal agents, were: Williams, Jack Bates, and Lodgar Duet, all U. S. agents, and Billy Ranson, Ulysse Ougel and Lloyd Songe, all agents of the Louisiana Wild Life and Fisheries Commission.

Williams said that 257 of the birds were ducks, while the rest were coots. The birds were confiscated as evidence but later will be turned over to charitable institutions, he reported.

The hunters will be charged with killing and possessing birds in excess of the legal bag limit. The limit on coots and ducks is four a day. The possession limit is eight.

The Farmer's Friend

MEADOWLARK

(Sturnella Magna)

Hannah Yates

LARK, is the common name for many small, oscine birds constituting the family Aludidae, of which all species are confined to the northern hemisphere and to the old world. These birds are noted for their relaxed, powerful flight and for the beautiful, prolonged song of the male.

The meadowlark is one of the birds that on account of its resemblance to an Old World species has acquired a name that is misleading, since the bird, although it does inhabit meadows, is not a lark but is related to American orioles and blackbirds. It is a bird of the open country, rather than of the woodlands and is found in all kinds of prairies and fields. It sometimes gathers into loose companies of considerable size.

Its length is 10 to 11 inches; upper parts, brown varied with chestnut, deep brown and black. The crown of the head streaked with brown and black, with a cream-colored stripe through the center, a dark brown line apparently running through the eye, another line over the eye is yellow, throat and chin yellow and a large black crescent on the breast like a shield or bib. Underneath, it is buff, spotted with very dark brown, outer tail feathers are chiefly white and conspicuous in flight. Its long, strong legs are well adapted for walking.

Every farmer's boy knows his father's friend the meadowlark, which keeps well hidden in the grass and grain stubble of the dry fields where the protective mimicry of its plumage effectually conceals it. When this bird takes wing, note the white feathers in the tail so as not to mistake it for the big brown flicker. The lark has the habit of being impolite by turning its back to hide the yellow breast from human eyes. It flaps and sails through the air like a bobwhite, but flying is not its specialty. Meadowlarks are active walkers, seldom rising from the ground unless an intruder is near, then it flies away with a sputtered alarm note, to alight upon a fence rail, grass mound, bush, or telephone wire. The tender, sweet, plaintive, flute-like whistle is usually rendered from some favorite platform, such as a stump, a rock, or a fence, to which he goes just for his musical performance only, singing on and on delightfully, not always the same song as he has quite a repertoire, which is charming to all listeners.

The female stays with her grassy nest and raises her family. She is almost impossible to find as she builds an arch over the top of the nest in the meadow grass. Wise farmers who realize what enormous numbers of grasshoppers, boll-weevils, cutworms, spiders, beetles, and other destructive insects these birds destroy, will not let their mowing machines pass over a nest if they can locate it first. By the time hay is ready for cutting in June, the little meadowlarks are running through their covered runways, but the second brood too frequently, alas, meets with a tragic end. Also there is a heavy toll from mice and snakes that eat the eggs. Lark eggs are white, spotted with brown, and about four to six in number.

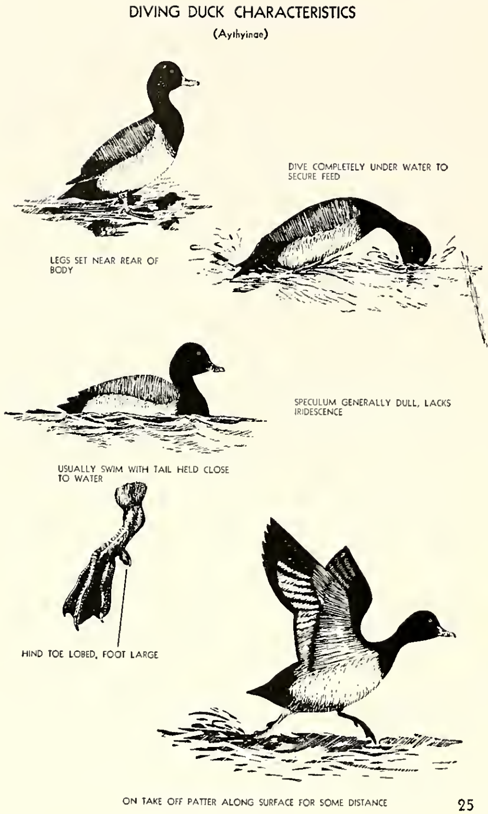
These birds are permanent residents of Louisiana and are known to many as the field lark. More words of prose and poetry have probably been written about them than any other bird.

As we have mentioned before, the meadowlark is one of our most trustful and sociable birds, manifesting a decided preference for the haunts of man and is one of the most valuable of birds that frequent the farming regions.

Investigations have shown that throughout the year, insects make up 73% of its food, grain 5%, and weed seeds 12%. During the insect season, insects constitute 90% of this bird's food supply. As a destroyer of insects and weeds, this bird is entitled to the best protection laws that public sentiment can provide.

LOUISIANA

By Dick Yancey


DIVING DUCK CHARACTERISTICS
(Aythyinae)
DIVE COMPLETELY UNDER WATER TO SECURE FEED
LEGS SET NEAR REAR OF BODY
SPECULUM GENERALLY DULL, LACKS IRIDESCENCE
USUALLY SWIM WITH TAIL HELD CLOSE TO WATER
HIND TOE LOBED, FOOT LARGE
ON TAKE OFF PATTER ALONG SURFACE FOR SOME DISTANCE
25

LOUISIANA acts as host for a wide variety of diving as well as puddle ducks. The most common are lesser scaup, ring necked ducks, canvasback, and redheads. In a closely related sub-family we have the ruddy duck which resembles the divers in many ways.

The diving ducks may be separated from the puddle ducks by any one of several characteristics. If a duck happens to be in hand it may be readily identified as a diver provided its hind toe is found to have a pronounced flap. No lobe or flap is present on this part of a puddle duck's foot.

In Louisiana all diving ducks except the ring-necked ducks, use open water areas all together. This species, however, is equally at home in flooded woodland swamps where duckweed or submerged aquatics are available for food. The ring-neck also differs from the others in that it will use fresh water areas only. Scaup and redheads seem to prefer salt water regions, while canvasbacks readily use brackish water areas. Although all species are frequently found together on one area, considerable differences occurs in their overall distribution in Louisiana. Redheads winter primarily at Chandeleur Island. Most ring-necked ducks winter in the permanent fresh water lakes of north Louisiana, the fresh marsh reclamation ponds of southeast Louisiana, and the impoundment located on the Lacassine National Wildlife Refuge in southwest Louisiana. Lesser Scaup use the areas noted on the opposite page while canvasbacks utilize the outer rim of the eastern side of the Mississippi River Delta, the ox-bow lakes located in northeast Louisiana, and the large fresh water lakes located in southeast Louisiana.

From the hunters' viewpoint, lesser scaup and ring-necked ducks are the most important of the four common species. Generally divers make up 15% to 20% of the overall kill on ducks in Louisiana. When considering the offshore scaup populations, the divers may equal or exceed Louisiana's puddle ducks in numbers.

In relation to population numbers, rink-necked ducks are by far the most heavily shot of the diver group in Louisiana. Hunter bag checks since 1950 show that this species makes up between 4% and 5% of the overall duck kill while population inventories reveal that they comprise less than 1% of the total number of ducks wintering in Louisiana.

Many hunters believe that the fast flying diving ducks provide the best wing shooting available for sport. These ducks have little trouble making up their minds once the decoys are spotted and their rapid determined approach and departure adds greatly to ammunition expenditures by hunters.

The fall migration of diving ducks into Louisiana occurs in a relatively short period of time between the last few days of October and the first ten days in November. This greatly differs from the puddle duck flights that arrive from mid-August to mid-December. When the divers are really on the move about November 1, spectacular flights may be observed, particularly along the Mississippi River. Some large flocks are to be observed resting and floating along with the current while continuous strings pass overhead.

At this time wintering habitat does not appear to be a problem insofar as the diving ducks are concerned in Louisiana. Percentage wise the ring-necked duck is the one diver that appears to be receiving an excessive amount of hunting pressure in Louisiana. The only refuge used extensively by ring-necks is the one mentioned above, otherwise the areas used are easily, and consequently, heavily shot over. Both canvasback and redhead populations are reported to be precariously low at this time although this does not appear to relate to any conditions that can be rectified in Louisiana. Inasmuch as special regulations apply to these two species all hunters would do well to become acquainted with their recognizable characteristics and thus assist in holding down the overall kill.

WATERFOWL

NUMERICALLY the scaup or "dos gris" is the most important single species of waterfowl wintering in Louisiana. Estimates made to date in Louisiana indicate that upwards to two million winter in our coastal waters. Because of difficulties encountered in taking census of scaup it has been impossible to maintain accurate periodic population records but the above mentioned figure is considered conservative. In recent years 600,000 to 800,000 have wintered on Lake Pontchartrain alone, and at the same time large numbers have been observed on Lake Borgne, and widely scattered in both inside and outside coastal waters as far west as Sabine Lake. Hundreds of square miles in the Gulf of Mexico are utilized as wintering grounds by these ducks.

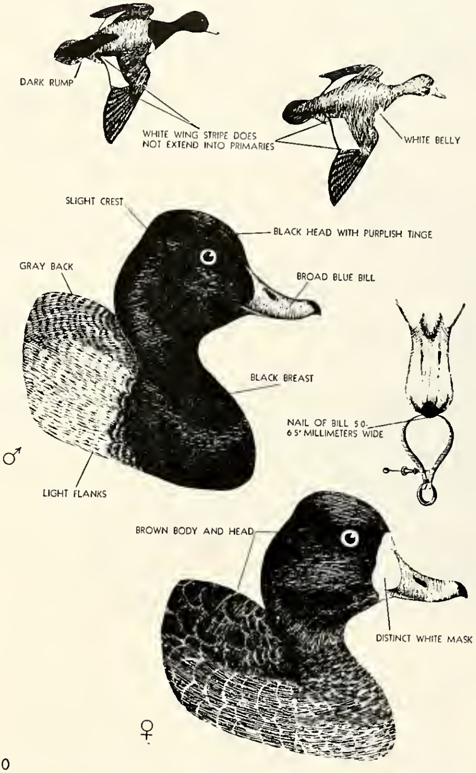
The migration of lesser scaup into Louisiana waters is a spectacular one and regularly occurs at the same time each fall. Records have been maintained since 1950 and these show that scaup consistently appear in large numbers between October 27 and November 4 each year. This flight is particularly noticeable along the Mississippi River and usually appear slightly in advance of an approaching cold front.

During the fall migration many scaup pause only temporarily in Louisiana before progressing onward to other wintering grounds. In recent years more and more appear to be staying over in our coastal areas as winter residents and this may account in part for the reported decline in scaup numbers in the Atlantic Flyway. Much, however, remains to be learned regarding the migration and distribution of these ducks.

The spring migration of scaup back to the nesting grounds in western Canada usually begins in mid-March. This departure generally reaches its greatest intensity in the latter part of March, although large numbers are still to be found in mid-April. During some years flocks ranging in size up to 500 have been observed in July, however, these were considered to be stragglers unable to make the trip back to the breeding grounds.

Hunters' bag checks conducted since 1950 prove that about one out of every ten ducks taken in Louisiana is a Lesser Scaup. These ducks are most important in the marshes of southeast Louisiana where they comprise upwards to 40% of the overall kill in some years. Although countless thousands winter offshore from southwest Louisiana they seldom move into the marshes where they can be taken in large numbers by hunters. In north Louisiana scaup generally make up a fair share of the overall waterfowl kill. Most of these are taken on the large open bodies of water such as Catahoula Lake.

LESSER SCAUP
(Aythya affinis)



In selecting habitat for use in Louisiana the lesser scaup appear to have only one requirement and this is that the body of water in question be open and free of obstructions that may block a take-off. Water depths may range from a few inches up to 25 feet, acreage sizes may vary from a half acre marsh pond up to the Gulf of Mexico, and water conditions may be salty or fresh. Animal or plant material is equally attractive as food, although the former is much more heavily used in Louisiana. Small molluscs, crustaceans, and such aquatics as widgeon grass are most extensively consumed.

In north Louisiana the areas most heavily used by lesser scaup are the large open ox-bow lakes, Catahoula Lake, and the man-made impoundments now opened up by the drowning out of former timber stands. In southwest Louisiana, Calcasieu Lake, Sabine Lake, and the Gulf of Mexico waters, just offshore from the coast, serve as a winter home for tens of thousands. The greatest usage in the State occurs in southeast Louisiana. Here Lake Pontchartrain, Lake Borgne, Lake Verret, Lake Des Allemands, Lake Salvador, and virtually all of the brackish or salt water marsh ponds and bays, and the Gulf of Mexico out as far as Chandeleur Island, are extensively used. In consideration for the future it appears doubtful that any shortage of wintering grounds will prevail for this species in Louisiana.

WORM...

Fisherman's Favorite

Ednard Waldo

EVERYBODY KNOWS that a worm will turn, and that the early bird will get one . . . that a person you are not particularly fond of is likely to be—a worm. But who knows much about the most familiar of worms made famous by Izaak Walton's "Compleat Angler"? We refer to the good old earthworm.

To begin with, to the biologists, there are many kinds of worms which the scientists call annelids, and you will find them in almost any part of the world in fresh water and salt water and, as a matter of fact, there are thousands of species crawling around Mother Earth, but the one which concerns the fisherman most is the red worm, and this is what Donald W. Pfitzer has to say about them, in the Tennessee Conservationist:

"There are an awful lot of different kinds of annelids in the world. Somewhere around 8,000 kinds have been described by biologists but these are not all earthworms. Some are marine worms, both fresh and salt water kinds, and it may be a surprise to many people that the leeches, those hideous creatures that suck the blood from higher animals, are close cousins of the lowly fish-worms. Some earthworms in Australia sometimes grow as much as eleven feet long and an inch thick.

"Next time you see an earthworm, notice that he crawls mostly in one direction. The end that is out in front is actually the head. It has a mouth and takes in food like any other self-respecting critter and in that head there is also a "brain." The quotation marks are put there as a sort of loophole in case someone wants to get technical. There is a big glob of nerve tissue in the front end that can be called a brain as well as anything else.

"Back of the brain there is an enlargement of the mouth that we will call a throat and behind that a greater enlargement of the insides that we call a gizzard. In this respect the worm is very much like the early bird that gets it. Neither of them have teeth so they must have some other place to chew their food. That's what a gizzard does. If you don't believe it, look it up in the dictionary.

"The worm is so well equipped that it has more than one "heart." To be on the safe side . . . quotation marks again. The so-called hearts are actually enlargements in the blood vessels located near the throat. Probably the most outstanding feature of a worm is the large band around the middle. This has a fancy name, Clitellum, but for now we will call it a girdle. This serves the function of producing the material that covers the eggs. When the eggs are deposited, this girdle strips off the body like a ring and is referred to as a cocoon. The young worms then hatch from the eggs inside this case.

"A lot of people have heard and believe that if a worm is cut into a number of small pieces each piece will form a new worm. This is not true. The truth is that if a worm is cut in half the front end will grow a new tail. What happens to the other end? So help me, it grows a new tail, too. The only trouble is that the two tails have no place for a mouth and the "thing" starves to death.

"Living in the ground as they do, worms feed on bits of decaying plant and animal matter and swallow much earth. They come out of the burrows at night and on cloudy days and also after rains. Their activities underground are most important to Man."

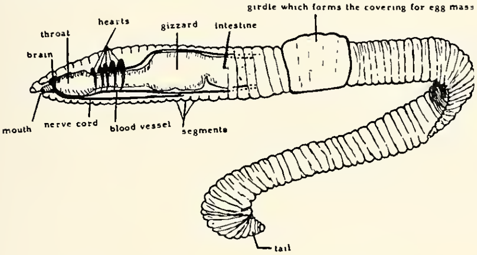
Charles Darwin, in his volume "The Formation of the Vegetable Mold," accredits the earthworm with being one of the most valuable creatures because, as Darwin and other scientists have pointed out, the worms which are constantly at work boring holes through the earth and perforating it, eating and digesting its content, not only keep the soil perforated and fertilize it but, also in effect, "turn over the soil."

Darwin tells of having covered a certain marked off section of ground where there were earthworms with a layer of shells and of how the action of the rain and the earthworms caused the shells to sink below the surface over a period of time.

However, whereas the earthworm may be the best friend of mankind, and especially the fisherman, Dr. E. A. Rogers, Director of the State of Nebraska Department of Health, points out the friendly earthworm may become the "sportsmen's nemesis" if not handled carefully.

Dr. Rogers has this to say, in a recent article in Outdoor Nebraska:

"Tetanus bacillus was discovered in 1884, but it was not until six years later that a Japanese physician found that blood serum from an infected animal injected into a healthy animal would produce an effective antitoxin for treatment of humans. These antibodies were the means of saving hundreds of lives during World War I. Since that time, science has found that chemical treatment of the toxin given off by the germ would render it nonpoisonous, but would not destroy its power to stimulate the production of antibodies when injected into the body. The result is a toxoid now available to all physicians in building long-time immunity against tetanus.



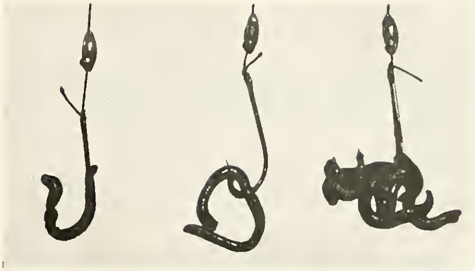
"What does all this mean to you as a fisherman and hunter? Read on and you will find the answer.

"Tetanus bacteria can live in the intestines of humans and other vegetable-eating animals, particularly horses, without causing trouble. The excreta in the soil is teeming with spores waiting to enter wounds, where they give off the poisonous toxin during the reproduction stage. Because of this fact, everyone who comes in direct contact with soil should be immunized against these germs.

"Where do fishermen look for fishworms? In these same enriched soils where tetanus spores abide.

"Because germ-laden dust may settle on the skin, one can readily understand that hunters in contact with barbedwire fences and with the possibility of intercepting stray bullets are especially vulnerable. In fact, gunshot wounds and protruding bone fractures lead all other causes in the development of lockjaw. Fishhooks, nails in the shoes, blisters, or anything leaving an open lesion where these powerful germs may enter, are potential trouble makers.

"The danger is not confined to deep wounds. Germs may enter a minor scratch where the scab formation may exclude oxygen. For this reason, the likelihood of infection in children is especially high. It is advisable that the first in a series of tetanus toxiod injections be administered in early infancy.



Three ways of lacing the worm on the popular bream hook.

"Again, we remind you sportsmen that lockjaw is preventable and that it is seldom encountered since the advent of immunization. Wash a newly inflicted wound thoroughly with soap and water. Apply a mild antiseptic and cover with a sterile dressing. Visit a physician promptly. He may decide to protect you against infection by giving a shot of tetanus antitoxin for the immediate injury. Tetanus toxoid is recommended for long-time immunity."

Earthworms are known by many names but by whatever name they are the most abundantly used live bait and are rated as the best fish catchers. Earthworms are also called angleworms, night-crawlers, gardenworms, rainworms, fishworms and groundworms. There are two principal kinds, the U. S. Fish and Wildlife Service, which keeps track of such things for our fishing population, says. The two kinds are the earthworm, which is a solid pinkish-red; and the dungworm, which has marked red rings and exudes an unpleasant yellow secretion when handled or cut.

The dungworm is found in manure piles and in heavily manured soil. It has the advantage of being more readily obtained in the winter. The earthworm grows larger than the dungworm.

Earthworms may be collected during the humid season by exploring with a lantern or flashlight the surface of almost any well-fertilized or rich sod, after dark. Better results are obtained after a rain and in areas where there are few large trees. The best light for the purpose is one fitted with a red glass or lense, as red light does not frighten the worms.

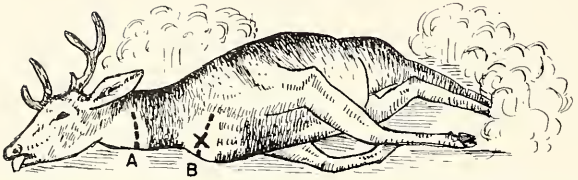
Another method that has been used is to tap or hammer on the surface where worms are known to be present. Still another method is to drive a stake into the ground to a depth of ten or more inches and vibrate it by rapidly rubbing a board or the head of an axe over the top of the stake. Electrodes with coils, such as were used in the Model-T Fords, and batteries have been used successfully and there are several brands of hand-cranked dynamos now being advertised in sportsmen's magazines which accomplish the same purpose.

A solution made by dissolving one bichloride of mercury tablet to a gallon of water and placed in worm holes has been reported as a successful method of collecting night-crawlers during the day. About two ounces or less of the solution to the hole, is adequite. Digging is a method commonly used to obtain worms at all periods of the year, but by no means is it always the easiest. The humus heap, which most

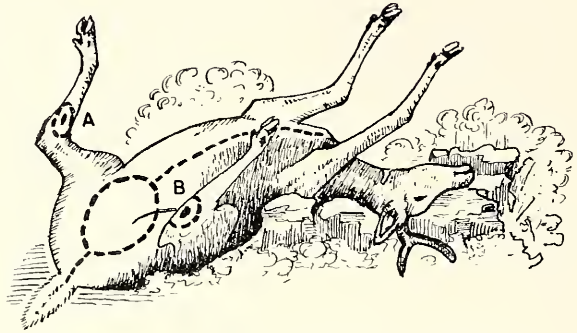
(Continued on Page 24)

HOW TO FIELD

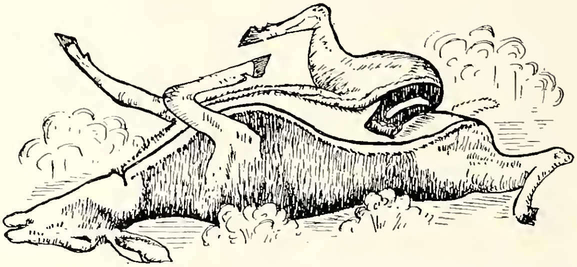
Steve Harmon



Bleed promptly. Cut throat at point A. Or if head is to be mounted for trophy, insert knife at point B cutting deeply until blood flows freely. In case of wound that bleeds free or internally, bleeding may not be necessary.



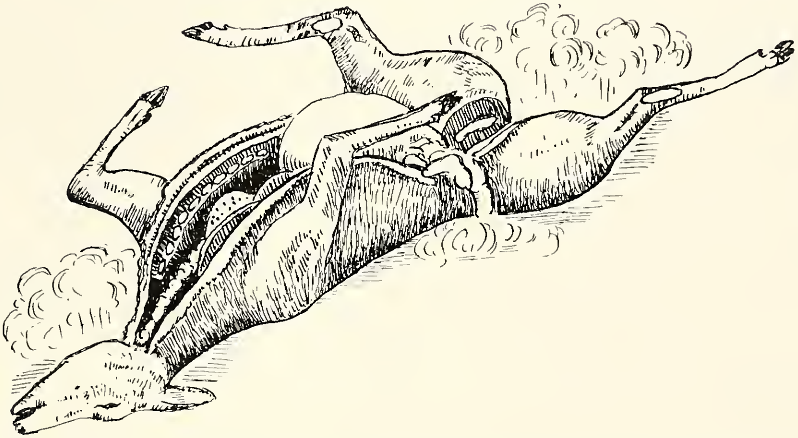
Remove genitals or udder. Prop carcass belly up, using rocks or brush for support, and cut circular area shown in illustration. Musk glands at points A & B may be removed to avoid tainting meat. Glands cease to function at time of death.



Split hide from tail to throat. Insert knife point under skin but do not cut into body cavity. Hide may be peeled back several inches on each side to keep hair out of meat.

DRESS YOUR DEER

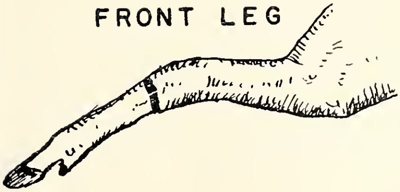
and Eleanor Fairman

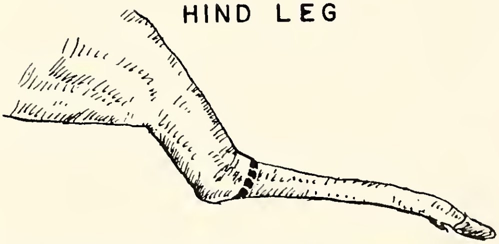


Cut through pelvic bone. Turning carcass down hill will cause viscera to sag into rib cavity. This will decrease the chance of puncturing viscera while cutting or chopping through bone. Large intestine can then be cut free from pelvic cavity but not severed from viscera.

Open carcass by cutting through length of breast bone and neck into exposed wind pipe.

Turn carcass, head uphill. Free gullet and pull viscera toward rear. An alternate method is to leave head down hill and strip viscera from rear out over the head.





Remove head and legs as indicated. Carcass should now be hung, and if meat sacks are available, skinned and sacked.

Allow carcass to cool before transporting if conditions permit. A cooling time of six hours before transporting is recommended by many hunters.

What's On His Grocery List?

The Barn Owl

Leslie L. Glasgow

The barn owl is undoubtedly one of the most beneficial birds in Louisiana. But like other owls it is a victim of long standing prejudices and is often killed by the people who benefit most from its persistent mouse catching habits. Why does such an unbelievable situation exist?

For centuries barn owls have been thought of as birds of ill omen; British game keepers have always considered them as vermin and many Americans have believed that they are important predators of small mammals and birds, especially game species and poultry. Since they live in close association with humans, they are frequently killed by misinformed people.

The future looks brighter for this bird. Thorough biological investigations have shown that it is the Nation's Number 1 Flying Mouse Trap and rarely disturbs poultry or game. More and more people are reading research reports and are thus acquiring an understanding of the complex relationship of owls to animals in nature.

The barn owl is slightly larger than a crow but when it fluffs its light buffy feathers it appears to be almost twice its normal size. It can be distinguished from other owls by its pale color, white heart-shaped facial disk, long legs and long wings. It is nocturnal and only occasionally active during the day. The bird's flight is silent, swift, and graceful and it has a highly developed sense of hearing and sight. Although it may not be seen during the day, its presence may be detected by the tremulous squeal and click-like call of hungry owlets but more often by the "shhhhheee" of an adult during flight after dark.

The distribution of the barn owl is world wide. It ranges throughout the United States but is more abundant in the northern states than in the southern states. It is found in every parish in Louisiana.

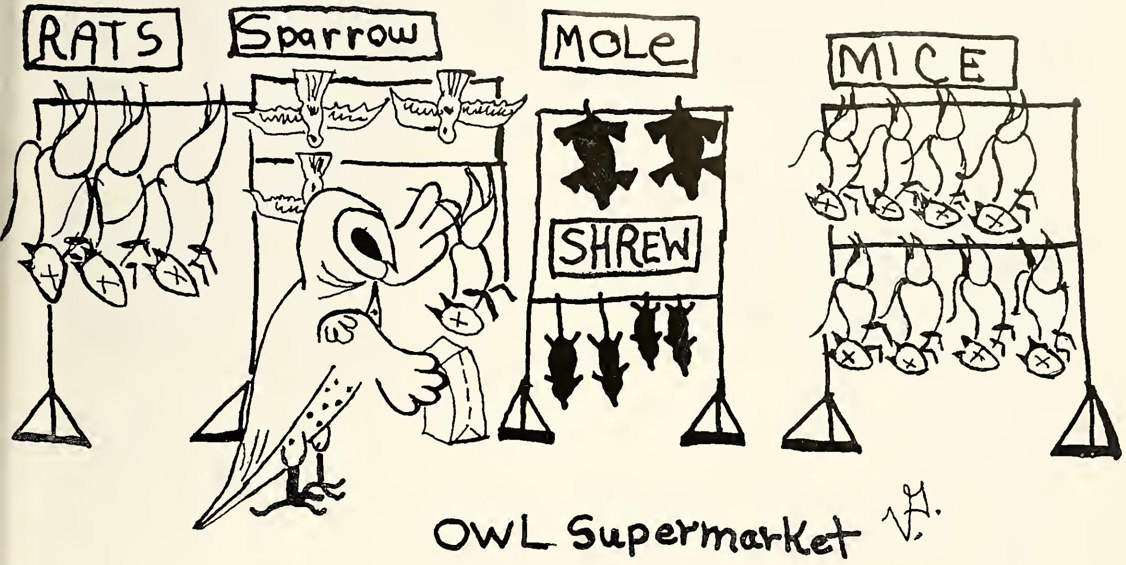
Barn owls in Louisiana are generally non-migratory with young birds dispersing in all directions from the nest site. However, northern barn owls are migratory as shown by the fact that birds banded in Ohio and Oklahoma have been recovered in Louisiana. One bird banded in Ohio was recovered in Southern Florida, a distance of 1075 miles from the banding site.

In Louisiana barn owls are birds of rather open country, preferring agricultural or suburban areas in which there are deserted buildings and trees containing large cavities. Large, old, trees (either isolated or in small groups) and the borders of woods adjacent to open fields provides excellent habitat. Barn owls are seldom found in dense tracts of timber.

Nests are often located in abandoned buildings, tree cavities, school or church steeples, holes in rock cliffs or structures such as bridges. When undisturbed, the same nesting site may be used year after year. No material is transported for nest building. Eggs are retained in a shallow depression of regurgitated (coughed up) pellets which are composed of fur and bones which accumulate at the site. In the South, barn owls probably nest every month of the year. The average clutch contains five to eight pure white eggs. Unlike many birds, incubation begins with the laying of the first egg. Since eggs are laid at two or three day intervals and incubation requires about 24 days, nests normally contain half-grown birds as well as newly hatched ones. Young birds remain in the nest about two months.

When small rodents are abundant, it is believed that barn owls raise two broods yer year, but when mice are present in moderate numbers, only one brood is produced. When mice are scarce, only the larger birds in a nest reach maturity; the older ones consuming their small brothers. Adults may not breed during extreme food shortages.

Young barn owls have an enormous appetite. They have a rapid rate of digestion and cannot go long without food. One bird was observed to eat nine mice in rapid succession and in three hours ate four more. Assuming that each owlet ate an average of 10 mice



per day, it would require slightly more than 4,000 mice to raise one brood to flight age. A pair of old owls feeding a nest of hungry young will catch far more mice than a dozen cats. Adults frequently gather excess food and store it at the nest site. A biologist in Michigan found 189 mice and one shrew at one nest and 73 mice at another.

Barn owls carry food in their beaks, not in their talons as does the hawk. They swallow their food whole or in large pieces. The undigestable parts of their prey—bones, fur, and feather—are coughed up in the form of pellets. Size of pellet is determined by frequency of feeding, size of prey, size of bird, and other variables. They average about ¾ by 3 inches in size. Owls generally regurgitate one to three pellets per day. The pellets may contain the remains of one to seven animals.

Approximately 100 percent of the prey items fed to owls in captivity can be recognized in the pellets; therefore, an examination of pellets gives an unusually accurate picture of the food eaten by these birds.

Game Management students in the Louisiana State University School of Forestry collected about 292 pellets at nest sites on the campus. Contents of the pellets are shown in Table 1.

TABLE 1. FOOD OF BARN OWLS ON THE L.S.U. CAMPUS

(Based on analysis of 292 pellets)

PREY ITEM	ANIMALS RECOVERED
Mammals	
Cotton rats	463
Rice rats	7
Norway rats	49
House mice	139
Golden harvest mice	19
White-footed mice	4
Unidentified mice	33
Least Shrews	88
Short-tailed shrews	18
Unidentified shrews	3
Lizzards	
Chameleons	3
Birds	
Mocking birds	1
Myrtle warbler	1
House sparrows	39
Meadow larks	3
Orchard orioles	1
Cowbirds	6
Unidentified (probably house) sparrows	12
Insects	
Grasshoppers	1
Katydids	5
Locusts	8
Beetles	20

The pellets contained 889 vertebrate animals. Of this number 714 (80%) were rats and mice, 106 (13%) shrews and moles, and 66 (7%) passerine birds. Other food items were of minor importance.

The food of owls on the L.S.U. campus was representative of that eaten by barn owls in Eastern United States. A check of 12 other food-habits studies revealed that mice made up from 70 to 100 percent of the diet; shrews from 0 to 30 percent and birds from 0 to 26 percent. The number and kinds of animals eaten varied slightly with location, season, availability, and abundance of the animals.

Since mice and rats carry fleas, ticks and diseases, they are a public health threat to all other animals including man. They consume millions of dollars worth of agricultural crops annually, destroy forest tree seeds, damage young trees, and compete for food with game species such as quail. They cause an enormous economic loss every year. Since shrews are largely insectivorous feeders they are beneficial animals. However, they may become a problem in local areas. Fifty one of the 66 birds eaten by the L.S.U. owls were house sparrows. No game bird remains were found in the pellets. In the 12 studies mentioned above the only game species taken were five young rabbits, one quail, and 16 rails. Therefore, it is evident that the barn owl's diet contains a preponderance of the worst enemies of farm crops. Consequently the farmer has never had a better friend. Since results of many food-habits studies in the Eastern United States have shown that an insignificant number of game species are taken,

Young barn owls in nest. When undisturbed the same nesting site may be used year after year and furnish an excellent place for student observation.

the sportsman can be assured that the barn owl seldom catches game. Also, because of the reduction in small rodents, the barn owl is a benefactor of the hunter as well as the farmer.

What can be done to help the barn owl? The greatest good can be accomplished by including some wildlife study units in the science programs of our schools. Since all children are interested in birds, a study unit about the barn owl would not only provide the teacher and students with an enjoyable period, but it would also teach the child some of the elementary relationships of animals and birds in nature. Students would gain an appreciation of barn owls and thus acquire a desire to protect them.

Nesting facilities may be the limiting factor for barn owls in some communities. Hollow trees undoubtedly are a preferred nesting site. Live oak, water oak, magnolia and cypress which contain large cavities are frequently occupied by a pair of owls. Don't destroy these desirable homes.

If no suitable trees are available an 18 x 24 x 24 inch box with an eight-inch opening nailed to the eaves of a barn will attract owls.

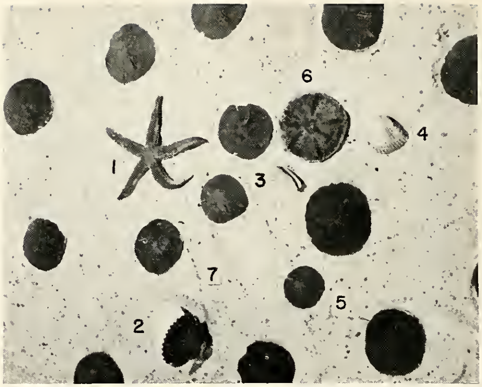
Everyone should encourage the protection of the barn owl since a look at its grocery list is convincing evidence that it is among Louisiana's most beneficial birds.

WINTER AT THE CHANDELEURS

(Continued from Page 5)

only to learn that most of the turtle grass, colorful algae, and other marine vegetation had disappeared since our November cruise of the area. Apparently the recent succession of norwesters, beating in behind these island outposts, had torn off the fragile parts of the plants and carried them away, leaving mainly stubble and underground portions.

Also, the delicious scallops which inhabited these gardens seem to have vanished entirely. Perhaps they jet-propelled themselves to some unknown wintering ground, for scallops can swim in a manner somewhat like that of a squid or octopus. There was no evidence of any unusual mortality. We scraped the bottom with our dredges, but found scallop shells a rarity amongst our collection of larger molluscan remains. Viewing through the water glass, we observed only a single-paired scallop shell where hundreds of living individuals have been seen and collected during other investigations.



In winter, at the Chandeleur islands, the bottom stares at you through crystal clear water. Marine money, in the form of sand dollars, lies all over the bottom. These sand bank deposits are varied with an occasional starfish, scallop shell, or other marine life. (1) Starfish, *Luidia clathrata* (2) Bay scallop, *Aequipectens gibbus amplicostatus* (3) Olive shell, *Oliva sayana* (4) Arc shell, *Noetia ponderosa* (5) Sand dollars, *Mellita quinquesperforata*. Round objects are sand dollars, one of which (no. 6) is upside down. Note sand dollar tracks in the sand (no. 7). Wildlife never go hungry on the game management area of the Louisiana Wild Life and Fisheries Commission where food and cover planting goes on constantly.

Hope for the future lies in a single live baby scallop, which was amongst our collection of small living molluscs after we returned to the laboratory. Although only a quarter of an inch across, this tiny scallop stood out like a redish bead amongst hundreds of achromatic and varicolored shells ranging in size from a sixteenth of an inch to more than an inch in length. This unique collection, made with small-meshed scraper nets, came from the stubble of the turtle grass.

James Frey New Commissioner

The Louisiana Wild Life and Fisheries Commission takes great pleasure in welcoming into its ranks James J. Frey of Lafayette, Louisiana, who was recently appointed to the commission. Mr. Frey is an executive of an old and established meat packing and processing firm which bears his family's name.

In these days of industrial encroachment on the wildlife habitat areas in Louisiana, we feel it appropriate to reproduce an editorial that appeared in 1921 issue of FIELD AND STREAM magazine. More Pass-a-Loutre's would offer more hunting for more people in the Pelican State.

EDITORIAL

Men of Ideals and Vision

SALUTE ye Sportsmen; salute two big-chested men with the strong hearts of oxen beating in their breasts, and salute their lieutenants. Salute, yet again, till your polished steel gun barrels dazzle the eyes of the minions under the classic dome that points to heaven on Capitol Hill in the city of Washington, D. C.

PASS A L'OUTRE they have named it. Even the name suggests chivalry and romance, and romance and chivalry it is with a dream that came to pass in these sordid days of to-day. Pray that some day you may be so smiled upon by the gods that you will stand at Pass a L'Outre and that you will be possessed of a soul of such bigness that you will take off your hat to the flag of the State of Louisiana floating in the soft, Southern hospitable breezes while wildfowl circle in great alluring and ever growing flocks overhead.

GENTLEMEN! Sportsmen! Allow me to introduce Governor Parker and Commissioner Alexander of the Sovereign State of Louisiana. Men, on your feet and a toast! They have taken away no personal liberty. They have given you back your heritage, or as much of it as was possible. They and their lieutenants have given you a princely shooting preserve of sixty thousand acres of the finest duck hunting in America, seventy-five miles down the river from New Orleans, keeping alive the spirit of Andrew Jackson. Pass a L'Outre! May this name and theirs go down in history.

IT BELONGS TO THE STATE, and the Governor and the Commissioner have made it possible. There, for the modest license fee of one dollar, the hunter of moderate means will enjoy the same duck hunting privileges that the multimillionaires have on adjoining private hunting club grounds. It is truly an American idea and a generous Southern one at that.

EVERY possible facility will be provided for the benefit of the Louisiana hunters who cannot afford membership in the exclusive and expensive private clubs nearby. A clubhouse and screened dormitories on a high point of land will be open to the gunners at a nominal fee that will cover only the actual cost of the hunter's stay, but there is no compulsion to use these facilities; one may camp in tents, sleep in motorboats or in the blinds.

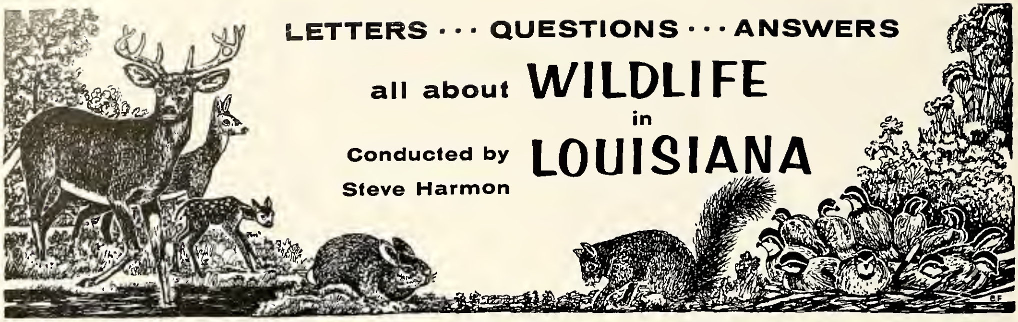
ROMANCE enters in a curious angle about this first public shooting ground of the southland and one of the largest in the United States. It is practically all newly created ground, this wide sixty thousand acres that belongs alike to every citizen of Louisiana. It is where the Father of Waters pours into the Gulf of Mexico, and old Father Mississippi built this himself out of the silt that came down his broad highway. We would like to think it was built with the departed souls of the dead ducks that the old-time market hunter killed in millions on its upper waters. God rest these old market hunters' bodies, not their souls, in peace—for they knew no better in their ignorance, but Nature again and two wise men, idealists and true men, knowing Mother Nature and Human Nature, have made this great thing come to pass out of the blue. The property could hardly have been bought for three hundred thousand dollars, but it was not for sale if these two big men could help it and they did. So, Mr. Sportsmen of Louisiana, *it is yours*, and touch your foreheads facing the East, to the hallowed soil of Pass a L'Outre, salute the flag of your country and the State of Louisiana, and don't forget Louisiana is the first State in the South to make possible on such a broad principle the fundamental rights of its citizens—God gave these two big men a larger vision—these two big men who live where the water hyacinths grow.

THE details of accommodation and overcrowding have been well thought out and planned. In the centre is a plot set aside for a sanctuary. Could any mortal man who knows the game ask for more? God bless our souls, I don't think so—it seems the last word.

THE bag limit is twenty-five birds a day, shooting in daylight only—and Mr. Citizen of Louisiana, if there is one of you with a liver so yellow that he will go one feather beyond the law, may his conscience be drawn and quartered and boiled in oil, may he die surrounded by gloating enemies and women he has lied to, and his body then be cast into an unknown grave without ceremony.

GOVERNOR PARKER and Commissioner Alexander, may you stand at the Pearly Gates and welcome the *true* sportsmen as they enter the Happy Hunting Grounds!

Hy. S. Watson.



LETTERS · · · QUESTIONS · · · ANSWERS

all about WILDLIFE in LOUISIANA

Conducted by
Steve Harmon

Dear Editor:

Just a picture of what can be caught in the Atchafalaya River in one's spare time if one loves a real sport.

The picture enclosed is what we cajuns call a channel cat. It weighed 63 lbs. and was caught in a Buffalo net. I am not a fisherman by profession but a school bus driver who loves to fish or set nets in his spare time. We cajuns wouldn't trade one of our choice cats for all the saltwater fish we see pictured in your magazine. *Sincerely, Alfred Fredericks.*

Slidell, La.

Dear Editor:

The Louisiana Garden Club Federation, the Louisiana Federation of Women's Club and members of other groups have formed the Louisiana Committee for Interstate Highway Advertising Regulation.

We are anxious to expand this committee to include the greatest possible number of interested people from all over the State. Would it be an imposition to ask you to furnish us with the names and addresses from your list of subscribers of individuals who might be willing to join us?

We will be most grateful. *Sincerely, Mrs. James W. Reily, Special Project Chairman, La. Garden Club Federaiton.*

Subscribers please take note.

Shreveport, La.

Dear Editor:

It is not my habit to write letters concerning public affairs, but this year there has been such a hue and cry from the duck hunters all over the state that I cannot help but express an opinion.

In all the years I have hunted in north Louisiana and in the marshes of south Louisiana, both east and west of Lake Charles, I have never seen such a poor season and from all accounts everyone is experiencing the same situation. The reason in our opinion is simple in that the opening date was delayed so long that no one has had a chance to shoot any flight ducks and as a result the ducks have had plenty of time to get together, raft up in huge bunches and will not stir at all. At our place just west of Hackberry, Louisiana, there are at least 10,000 ducks in a raft within rifle shot of two of the blinds, yet we have gone morning after morning in these two blinds without firing a cap.

At our shooting place in Mallard bay we have kept records for forty years and without a doubt this is the worst ever. I also took the time and trouble to look over the records carefully and it is quite apparent that the earlier the shooting the better average per blind. As a season goes on into December and January, the percentage falls off drastically.

I cannot imagine what motivated such a late opening, but to those of us who look forward from year to year to the duck season and invest substantial sums in this sport, it has been one of the keenest disappointments hunting wise in many, many years. I am simply passing this information on to you for whatever it is worth.—*Addison O. Wood.*

I must agree with you that the duck kill has been low in many areas this year despite a good opening hunt in some sections, but I don't believe we can lay the blame on the late opening date of the duck season. I have reviewed all the information we have to date and hope the following comments will explain in part the poor kill this year, and the Commission's problem in setting the season.

Production on the Canadian breeding grounds was practically nil this year according to the U. S. Fish and Wildlife Service and Canadian governmental agencies. We have made a strong effort to collect age ratios here in Louisiana which tell us how many young birds were produced per adult. Our findings to date indicate that production must have been as poor as reported by the above agencies. In fact, it may be the worst year since the drought of the mid-thirties.

Therefore, you are hunting mostly adult birds which have gone through one or more gunning seasons and which are more wary as a result. Studies *have shown that it is far easier to kill young birds than adults. As you know, the ducks seem both decoy and blind shy this year. We think the main reason for this is simply most of the ducks are old birds.*

There is a factor that may be affecting the kill in southwest Louisiana of late. Due to extensive changes wrought by hurricane Audrey in 1957, much of the lower marshes in Cameron parish have produced an abundance of wild millet. It could be that ducks actually can travel less, feed a shorter period of time, and rest more than they do in other years. If this is so, the end result would be a poorer kill.

Your comments that the kill falls in December and January may be true for your area but we have records that show the reverse for other parts of the state, particularly northeast and southeast Louisiana. In some sections there is NO early season hunting in most years since there is no water until late in the year.

This Commission faces another problem in years like this when the season is short. Our records show that we have more ducks in the state late than early. If the Commission set a November 1 opening, there is a chance that parts of the state would have no ducks for two or more weeks. We can hardly take the chance of losing that much time with only a 40-day season.

I might add that the majority of the sportsmen contacted prior to the season advised that they would prefer a late season if the season length was cut by the Fish and Wildlife Service. The Louisiana Wildlife Federation also requested a late season. In establishing the various hunting seasons, our Commission must try to benefit the greatest number of hunters, realizing that some areas will suffer as a result.

I appreciate your interest in the waterfowl situation. This Commission wants to set the best season possible each year within the framework provided by the Fish and Wildlife Service. It is not a simple problem since waterfowl production on the nesting grounds, weather and habitat conditions can upset anything we might do.—Morton M. Smith.

New Orleans 15, Louisiana

Dear Editor:

Many arguments have been raised concerning the shooting of wild fowl from roads or any driveways that may be accessible to automobiles.

I would appreciate your furnishing me with a ruling of some sort, as to the distance waterfowl may be taken from highways and such mentioned. This will clear up any misunderstanding that has prevailed in the past. Perhaps, in your conservation magazine you may mention this regulation, if any exist.

A prompt reply will be greatly appreciated. *Very truly yours, Francis J. Coquyt.*

According to D. Ross Bannister, general counsel for the Louisiana Department of Highways, there is no specific statute on record that says you cannot discharge firearms from public roads. However, section 94 of Title 14 of the Revised Statutes of 1950 says:

A. Illegal use of weapons are dangerous instrumentalities. Discharging of any fire arms, or the throwing, placing or other use of any article, liquid, or substance where it is foreseeable that it many result in death or great bodily harm to humans is intentional or criminal negligence.

D. Whoever commits crime of illegal use of weapons or dangerous instrumentalities shall be fined not more than $500.00 or imprisonment for not more than one year or both.

Krotz Springs, La.

Dear Editor:

Who said, "Fishing is poor"?

The enclosed photo is a catch made this month in Bay Sansbois by 10 year old Edward Lamulle, 3826 Pauger Street, New Orleans. Ed has been fishing since he was 7 years old, and always catches his share. He always goes with his father.

This trip Ed kept his catch separate to see if he could do better than his daddy (he did) . . . and is he proud!

Catch is six sheepshead, one drum, one flounder, three trout, total weight 36 pounds. Market bait was used in four feet of water.

Reprint permission granted. *Respectfully yours, Clarence A. Lamulle.*

Dear Editor:

We would appreciate an announcement of the Twenty-third Annual Short Course for Superintendents and Operators of Water and Sewerage Systems which will be held at Louisiana State University on March 16, 17, 18, 1960.

We would like to take this opportunity to thank you for the publicity you have given our meeting in the past. *Very truly yours, Fred H. Fenn, Dean, College of Engineering and Director, Engineering Experiment Station.*

Fisheries Management in Cane River Lake

A common sight on Cane River Lake shows Wild Life and Fisheries personnel preparing for a selective poisoning operation.

Donald W. Geagan

THIS PAST SUMMER the Fisheries Section of the Louisiana Wild Life and Fisheries Commission received reports of large catches of five to ten inch bass by fishermen in Cane River Lake, Natchitoches Parish. The question immediately arose as to why, after years of poor bass fishing, there is suddenly such an abundance of yearling fish. Some people in the lake's area have, much to the discouragement of Fisheries Personnel of the Louisiana Wild Life and Fisheries Commission, answered this question by merely saying, "Nature has taken its course". I say this answer is discouraging to the Fisheries Personnel because of the extensive effort which they have put forth in a management program to achieve such an increase in the bass population. It is for the purpose of discussing this program that the following has been written.

Let us first take a look at the history of Cane River Lake, which is an old river bed approximately thirty-five miles long and an average of 250 feet in width. As any fisherman in central and northwestern Louisiana knows, this lake was at one time famous for fabulous catches of largemouth bass. It is reported that at one time a fisherman could catch his limit and still be to work on time in the morning. However, since 1945, when the Red River broke its levee and flowed through Cane River Lake for fifteen days, fishing declined until by 1954 very few bass were taken by expert fishermen practically and none by the average angler.

Samples taken at that time by the Louisiana Wild Life and Fisheries Commission indicated that there was an over abundance of rough fish, particularly shad, in the lake. From these results it was decided that a total poisoning and restocking project be undertaken with the cost of the chemical being borne by the Natchitoches Parish Police Jury and the Louisiana Wild Life and Fisheries Commission. In the summer of 1955, this project was undertaken.

The lake was poisoned in sections from one-fourth mile to two miles at a time with each section blocked off with three-fourth inch webbing. The operation was conducted in this manner in order to allow time for the picking up of dead fish. This later proved to be an undesirable method, as smaller fish passed through the netting and into the already treated areas. Because of this movement of smaller fish, twenty miles of the thirty-five mile lake were immediately selective poisoned for shad after the main project was completed. After this poisoning operation, the lake was stocked with approximately 40,000 bass four to six inches in length and in the following spring 110,000 fingerling bass were stocked.

In 1956, a selective poisoning project of three consecutive years was recommended. However, due to the lack of funds, this was not undertaken until 1957 with the cost of the necessary chemical paid by the Natchitoches Parish Police Jury and the Louisiana Wild Life and Fisheries Commission. This operation was of limited success due to a labeling error on the rotenone bags, which was responsible for a concentration of only 80% of the necessary amount of chemical needed.

Happily the chemical was replaced by the manufacturer and the first complete selective poisoning of Cane River Lake was conducted in the fall of 1958. Since then, there also has been a second complete treatment in the fall of 1959. The concentration used in 1959 was stronger than in 1958 in an attempt to kill a portion of the carp population present. This was of considerable success, as large numbers of dead carp were noted following the operation. A third such selective poisoning is planned for 1960 and it is our hope that this will be the last such operation needed on the lake at this time.

The above mentioned selective and total poisoning operations have not been the only management tools used, although they are perhaps the most spectacular and are noted most by the general public. In addition extensive netting has been conducted for the control of other types of rough fish and also as a means of evaluating the current composition of the lake's fish population.

This netting has included the use of seines, hoop nets in series with leads, gill nets and trammel nets. The seining operations are primarily for sampling purposes, although any rough fish taken are destroyed. The hoop net series are of considerable value in the capture and removal of bullheads and the gill and trammel nets are useful in the taking of carp. Fishing with this equipment has been conducted periodically since 1957.

Still another tool used has been the draw-down of the lake's water level. This has served several purposes, among which are: the need of less chemical to be purchased for the selective poisoning projects, the making available to predators of the small sunfish which tend to become over abundant by driving them from the sheltered bank areas, and the oxidation and conditioning of the exposed bottom areas.

Now that we have briefly discussed what we are doing on Cane River Lake and why, let's look at how we evaluate these procedures and also how we keep tab on the current fish population. In order to do this, we must obtain samples of the fish population. This is done in several ways. The above mentioned netting operations are useful for this purpose. Also each year a series of three one-acre rotenone samples are collected. This procedure includes the surrounding of a surface acre of water with a small mesh net and then poisoning all of the fish within the area. All of the fish collected by this means are identified, weighed, measured and from some species scale samples are taken. In addition reproduction studies are conducted early each summer to determine the success of the spring spawn.

Another type of sampling is conducted in Cane River Lake and this probably goes on with the least notice of all. This work is performed as part of the Dingell-Johnson Federal Aid Project F-6-R. As outlined in this project, Cane River Lake, along with three other Louisiana lakes, is sampled for field water chemistries including: temperature, dissolved oxygen, free carbon dioxide, alkalinity and pH. Samples are also taken for laboratory analysis for total and available phosphates, nitrite nitrogen, nitrate nitrogen, organic nitrogen, dissolved nitrogen and turbidity. At the same time samples are collected for plankton analysis. Plankton is the microscopic plants and animals which are the start of the fish food chain. On a quarterly basis, bottom samples are collected to evaluate this form of fish food. The final result of this study will give us a better understanding as to the basic fertility of Cane River Lake and of the other three study lakes.

While all the above mentioned sampling procedures are valuable and afford much information, we are missing a most important method of evaluating the success of our program. This is the lack of an adequate creel census. Such a census would tell us accurately how much the sports fisherman has benefited to date and after all, this is where it counts. Because the entire program is and has been aimed solely at getting the maximum sportsfishing out of the lake. However, due to the expense of conducting such a census and the shortage of funds available, this method of evaluation has been omitted.

Fisheries personnel spraying rotenone in Cane River Lake during the selective poisoning operation.

Dead fish banked up along the block-off net during a total poisoning project to remove trash fish to make room for game species.

Well, so far we have discussed briefly the history of the decline of bass fishing in Cane River Lake, the methods used in our management program to improve this fishing, and our technique in keeping tab on the changes in the fish population composition; let's now review some of the results. I should make that read "the results to date", as we are by no means finished with Cane River Lake; nor do we feel that the fishing has reached its peak.

First, the results of our rotenone studies have shown the bass production has increased annually from 0.36 pounds per acre in 1956 to 13.4 pounds per acre in 1959. At the same time, there has been an increase in largemouth bass reproduction as shown in samples with particularly good crops noted in 1958 and 1959. The large quantities of bass of which we spoke in the beginning of this article are the result of the successful spawns from 1958 and 1959.

Another criterion as to the success of the return of the bass population is the reports of local fishermen. While this method affords no accurate method of comparison or evaluation, it does give at least an idea as to the fishing success encountered on the lake. Bearing these restrictions in mind, we do note that now reports are common of catches of five to ten bass and also occasionally of creel limits taken, where before 1955, fishing was so poor it was a novelty to have any degree of success at bass fishing. Also noted are the large numbers of fishing boats and fishermen along the length of the lake where again prior to 1955 few, if any, were noted. Another proof of the pudding that the bass population is on the upswing are the reports of large numbers of undersized bass which may be taken. Some sportsmen have reported taking as many as seventy-five of these fish and returning them to the water in an afternoon's fishing.

The next question let's consider is the result of the annual draw-down program which we earlier mentioned

(Continued on Page 24)

The Big
GMA
Pay Off

Game agent Nick Niehaus, of the Law Enforcement Division of the Louisiana Wild Life and Fisheries Commission is seen with Leo Carrier, of Amite, right, with one of the buck deer taken on the first controlled deer hunt at Zemurray park.

MORE THAN twenty-five thousand hunters availed themselves of hunting privileges on the game management areas of the Louisiana Wild Life and Fisheries Commission during conducted hunts this season, according to Rudolph P. Easterly, director.

The first "any deer" hunts were held on the four game management areas in central Louisiana on November 23 at the Red Dirt Game Management area, in Natchitoches parish, Catahoula Game Management area in Grant and Winn parishes, Evangeline Game Management area, in Rapides parish and Sabine Game Management area No. II, in Sabine parish. Sabine Game Management area No. 1, has been opened to the public for the entire season.

The recent "any deer" hunts should not be confused with the first antlerless deer hunt which was conducted on the Chicago Mills Game Management area, in Tensas parish, during the 1958-59 season, from December 29 to January 2nd, Easterly said.

On this hunt 183 deer were taken. In contrast, on the hunt this season, which began on December 1 and was a three day any-deer season climaxed by a seven-day bucks-only season the first two days showed a take of 417 deer. Game Management biologists attributed the heavy kill for the first days of this December's hunt to the fact that the area is more accessable to hunters than last season because the commission has had time to build access roads through the Chicago Mills area. At present complete figures on the deer take in this area have not yet been tabulated.

Red Dirt and Catahoula were open on two weekends, totaling five days "for bucks only" before the "any deer" hunt. Evangeline and Sabine were open for a two-day "bucks only" hunt prior to the "any deer" hunt.

The number of hunting efforts and total kill on the areas open for the "any deer" hunts were as follows:

Area	*Hunting Efforts*	*Kill*
Catahoula	2410	222
Red Dirt	2500	227
Evangeline	1083	62
Sabine #2	362	8
TOTAL	6355	519

During the one-day "any deer" hunts, one out of every 12 hunters killed a deer. During the preceding hunts, when bucks only were legal, one out of every 30 hunters bagged a buck. During the "any deer" hunt about 40% of those deer killed were bucks, many of which had large well-formed racks.

The Zemurray Park Area, in Tangipahoa Parish, was open from November 16-18 for bucks only. Since this area was limited in size, 300 hunters, 100 per day, were chosen by lottery to hunt the area. Twenty-seven bucks were killed on that particular area. The total number of hunting efforts and total kill on the game management areas open November 14-16 and November 21-23, were as follows:

Area	*Hunting Efforts*	*Kill*
Catahoula	6390	354
Red Dirt	7616	337
Evangeline	3132	113
Sabine #2	898	21
Grant-Rapides	1014	35
Zemurray	300	27
TOTAL	19,350	887

This unusual antlered doe deer was taken on the controlled deer hunt held recently at Zemurray park. The hunter was allowed to retain possession of the deer after the hunt, which was for "bucks only," since it was a rarity and was not distinguishable as a doe until after it was taken.

Personnel of the Louisiana Wild Life and Fisheries Commission were well pleased with the hunter response, conduct, and deer kill on the day "any deer" were legal. This was the first and most important step taken toward proper deer management in Louisiana, commission game biologists said.

They reported it was interesting to note that many people who had opposed the "any deer" hunts were out hunting on the day "any deer" were legal and did bag a doe. The question is "Just how much do these people oppose "any deer" hunting?"

The deer range on Evangeline, Red Dirt and Catahoula Game Management areas is in rather poor condition, the biologists said. "Many local people around these areas do not agree with this because some of the deer, particularly the does, were in good condition. However, it should be remembered that there was a good growing season this year and there is a good mast crop. That is why those particular deer were in good condition. Most of the deer in the one and one-half year old age group were spikes and some in the two and one-half year age group had poor antler development. If these deer had been on good range during the late part of last winter and spring they would have had a much better antler formation."

Charles de Phillips, of Loranger took the first buck on the three-day controlled deer hunt at Zemurray park.

"What would have happened on those ranges after this year's acorns are gone? The deer would have soon consumed the available browse and would have been hungry. Without plenty of high quality browse the fawn crop for next year would be limited and the bucks would again have poor antler development. Proper management of a deer herd calls for an annual regulated 'any deer' hunt," they pointed out.

With the kill as it was on the game management areas that were open for "any deer" hunting, many may think the deer herds were wiped out. We ask those to keep their eyes open and they will still see deer on those areas, the biologist in charge said.

Commission biologist Dick Roberts, Supervisor of District 7, examines antlers of buck taken at Zemurray park hunt. Fred Joiner, Game Management Supervisor, center, chats with L.S.U. biology student on hand for observation.

Captain Leonard New, of District II, of the Law Enforcement division of the commission, examines one of the buck deer taken on the first Game Management Area hunt conducted at Zemurray park. With him is Project Leader Kenneth Smith, right, who reported on condition of the animals.

WORM . . . FISHERMAN'S FAVORITE!

(Continued from Page 11)

gardeners keep, should not be overlooked.

One of the essentials in storing earthworms is to keep them in a temperature about sixty degrees Fahrenheit. Temperatures above seventy degrees are fatal. Worms should be kept in a rustproof container, preferably one made of wood or earthenware.

The fisherman wishing to store for his personal use and for the use of the other fishing members of the family may secure a tight wooden box about 60 x 36 x 18 inches. This box should serve as a rearing box for several hundred worms. The box should be well tarred on the outside and lined with hot paraffin wax. The lid should fit well and serve as a roof to keep out of the rain. The box may then be filled with rich, damp soil and stocked with worms.

A small worm farm may be established by obtaining two ten-quart galvanized buckets or two wooden pails. If metal containers are used, the bottom and sides should be well perforated with small holes which will allow for adequate drainage, but will not be so large as to allow the worms to crawl through. If wooden pails are used, they may be tarred on the outside, paraffined on the inside. Holes of any size may be bored in the sides and bottoms and these covered with scraps of screen wire. Each pail should be filled with loose, non-sandy dirt into which has been mixed 1/3 cup of animal lard mixed with 2/3 cup of corn meal, or just one cup of homogenized dog food per pail may be used.

Sprinkle the pails with water until the earth is moist but not drowned out. Put about 50 adult worms on the surface and they will almost immediately burrow into the soil. Place the containers in a cool place where the temperature will remain around 60 degrees. Check the containers once a week for moisture, however, do not overwater. Every three weeks remove the top three or four inches of soil and mix in one half cup of whatever mixture you used in the beginning. Now dump the remaining soil out of the containers and put the soil, to which has been added the mixture, in the bottoms of the containers. Replace the rest of the dirt that you have dumped out. Be sure to observe the condition of the bottom soil and if it is muddy or mouldy you are either overwatering or overfeeding. If you follow this routine, your "farm" should produce a new crop of worms in 6 to 8 weeks which will be large enough for bait in about 12 weeks. Each container should produce about a thousand adult worms plus a new upcoming colony of baby worms.

Large tubs, steel drums cut lengthwise, or other tight containers can be used to raise the family supply of worms in the basement or garage. Three cubic feet or 23 gallons should produce from 3000 to 5000 worms per year. Animal lard, vegetable shortening, corn meal, cottonseed meal, or other fat and starchy foods are used for feeding, also homogenized dog food.

It has been found that a ratio of one pound of shortening to two pounds of corn meal makes a very satisfactory ration. On the basis of one cubic foot of space, one pound of food per month is adequate.

In these large beds, feeding twice a week is usually sufficient, as uneaten food will contaminate the worm bed. The beds should be kept moist but not too wet. If the soil becomes too dry, the worms will move towards the bottom of the container; if it is too wet, the worms will be on the surface. The soil of all containers should be kept covered with two or three thicknesses of burlap to retain the moisture.

If mice or rats raid the worm bed, it can be covered with a screen. Ants also eat worms. These can be kept out by placing the legs of the container in cans of oil or by dusting the floor around the container with pyrethrum or derris powders. Mites (greyish-white animals the size of the head of a pin) are often troublesome. These may be controlled by lightly dusting the top of the soil with sulphur.

Where compost heaps are maintained, these may be stocked with worms if they are not already present. The rich, moist soil around the base will provide worms throughout the year.

Earthworms will live longer on the hook and will take more fish if well "scoured." This toughening process is accomplished by placing the worms in earthenware containers or wooden boxes containing damp moss, for one to two days before they are to be used.

In another issue of the CONSERVATIONIST we will tell of other fish baits and about their collection, care, preparation and propagation. Baits such as crayfish, fiddler crabs, crickets, mealworms and the like. And lest you should forget—in a crossword puzzle—a worm is an *ESS*.

FISHERIES MANAGEMENT

(Continued from Page 21)

for the control of small sunfish. Well, in 1957 and 1958, prior to any draw-down program, rotenone samples indicated less than one-tenth and one-fourth respectively of the bluegill population was over five inches in length. In 1959, following the 1958 drawdown, this figure had climbed to 55% of the total bluegill production which means that now over half of the bluegill population is of a size available to sportsmen.

Another bright prospect which has shown up this year is the taking of some white crappie in our rotenone samples and of the catching of considerable numbers early this fall of this species in our hoop net series. The development of this fish will be closely watched along with all other facets of the lake's fish population composition.

We hope, and I say "we" speaking for the Fisheries personnel which have worked on this project, that this will give the sports fishermen of Louisiana some idea of why we feel that the better fishing in this lake did not just happen because "nature took its course". We feel and we hope you do also now that this improvement in fishing is a result of our management program. True, the program is not finished because the fish population of a body of water is an ever changing thing. However, it is through the use of some of the management tools; such as, chemical and netting control of rough fish, water fluctuation and others that we hope to manipulate the fish population to favor the fisherman's success. And as for the success of these methods, I believe anyone who fished Cane River Lake prior to 1955 and recently will substantiate it.

Louisiana Hunting Seasons 1959-1960

Resident Game Birds and Animals

Shooting Hours—One Half Hour Before Sunrise to Sunset.

BOB-WHITE (quail or partridge): November 26-February 15, inclusive. Daily bag limit 10, possession limit 20.

WILD TURKEY: To be set by January 1960. Framework: March 1-April 30.

SQUIRRELS: October 17-January 10, inclusive. Daily bag limit 6, possession limit 12.

BEAR: Closed Season.

DEER: 7 to 58 days, depending upon the area, from November 14 through January 10. Obtain pamphlet for Map and details.

A. Bag: 1 legal deer per day; 2 legal deer per season.

B. Legal bucks defined as those deer having antlers (spikes) of 3 inches or more in length, and will be the only legal deer except as otherwise specifically provided for in specific areas.

C. Any deer are defined as all deer with the specific exception of spotted fawns, which are protected.

D. Still Hunting Only prohibits the use of dogs for hunting deer in areas so designated, including Game Management or Refuge areas except where specifically permitted. In all other areas, deer hunting will be permitted with or without the use of dogs.

COMMERCIAL HUNTING PRESERVES: October 1-March 31. Pen raised quail only.

GAME MANAGEMENT AREAS: Obtain pamphlet for schedule.

Migratory Regulations

DOVES: September 5-September 20, inclusive, and November 26-January 13, inclusive. DAILY BAG LIMIT 10, POSSESSION LIMIT 20. Afternoon shooting only.

DUCKS: November 26-January 4, inclusive. DAILY BAG LIMIT 4, POSSESSION LIMIT 8. Only one canvasback, or one redhead, or one ruddy duck may be included in a bag or possession limit. One wood duck and one hooded merganser may be included in a bag or possession limit. Red breasted and/or American mergansers, daily bag limit 5, possession 10, in addition to other duck limits.

GEESE: October 31-January 8, inclusive. DAILY BAG AND POSSESSION LIMIT: 5, including in such limit not more than two Canada geese (or its subspecies) or two white-fronted geese (speckled-bellies), or one of each.

COOTS: (Poule-d'Eau): November 26-January 4, inclusive. Daily Bag Limit 4. Possession Limit 8.

RAILS and GALLINULES: October 3-November 21, inclusive. Daily bag and possession limit 15.

SNIPE (Wilson's or Jack Snipe): December 5-January 3, inclusive. Bag and Possession limit 8.

WOODCOCK: December 7-January 15, inclusive. Bag limit 4, possession limit 8.

SHOOTING HOURS:

(1) Ducks and Coots: Sunrise to sunset except opening day which will be 12:00 noon.

(2) Geese and Snipe: Sunrise to sunset.

(3) Doves: 12:00 noon to sunset.

(4) Rails, Gallinules and Woodcock: One half hour before sunrise to sunset.

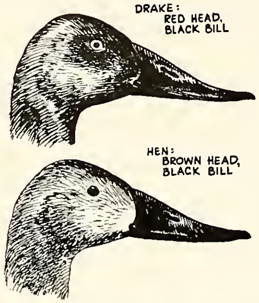
Use of bait and live decoys prohibited. Hunters of ducks and geese who have reached their 16th birthday must have a federal waterfowl stamp attached to required state hunting license or permit. A federal waterfowl stamp may be obtained from any U. S. Postoffice. Use of rifles, or shotguns larger than 10 gauge or capable of holding more than three shells prohibited. The plug used in guns must be incapable of being removed without disassembling gun. Legal possession limits of game birds or game animals may be possessed up to within 30 days of the opening of the following season.

Licenses

HUNTING LICENSE, RESIDENT (Required of all residents who have reached their 16th birthday. Residents 60 or over must possess free permits obtainable at Sheriff's office.)	$1.00
HUNTING LICENSE, NON-RESIDENT (Required of all non-residents, except those under 16 years of age.) RECIPROCAL WITH OTHER STATES.	
HUNTING LICENSE, NON-RESIDENT (COMMERCIAL HUNTING PRESERVE ONLY—4 DAY TRIP) (Licenses issued at preserve only. Not required in addition to reciprocal license.)	$5.00
MILITARY PERSONNEL on Active Duty are exempt from the purchase of Louisiana hunting and angling licenses.	
HUNTING CLUB LICENSE	$ 5.00
COMMERCIAL HUNTING PRESERVE LICENSE	$200.00
TRAPPING LICENSE Trapping seasons to be announced. Only residents permitted to trap.)	$ 2.00
FUR BUYER, RESIDENT	$ 25.00
FUR BUYER, NON-RESIDENT	$100.00
FUR DEALER, RESIDENT (Deposit $500.00 required)	$150.00
FUR DEALER, NON-RESIDENT (Deposit $1000.00 required)	$300.00

(REPORT ALL VIOLATIONS TO YOUR NEAREST WILD LIFE AGENT)

CANVASBACKS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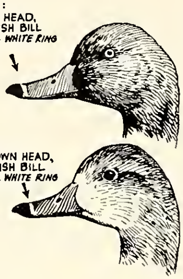
BLACK BILL

HEN:
BROWN HEAD,
BLACK BILL

REDHEADS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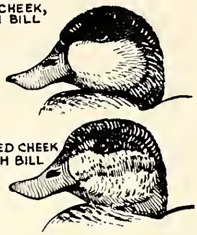
with WHITE RING

HEN:
BROWN HEAD,
BLUISH BILL
with WHITE RING

RUDDYS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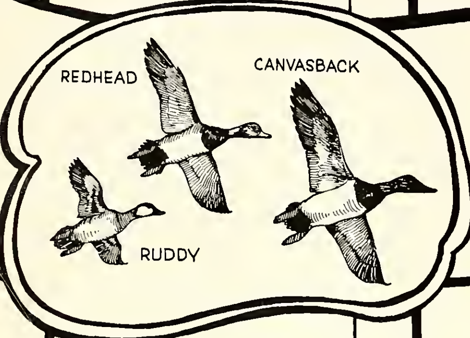
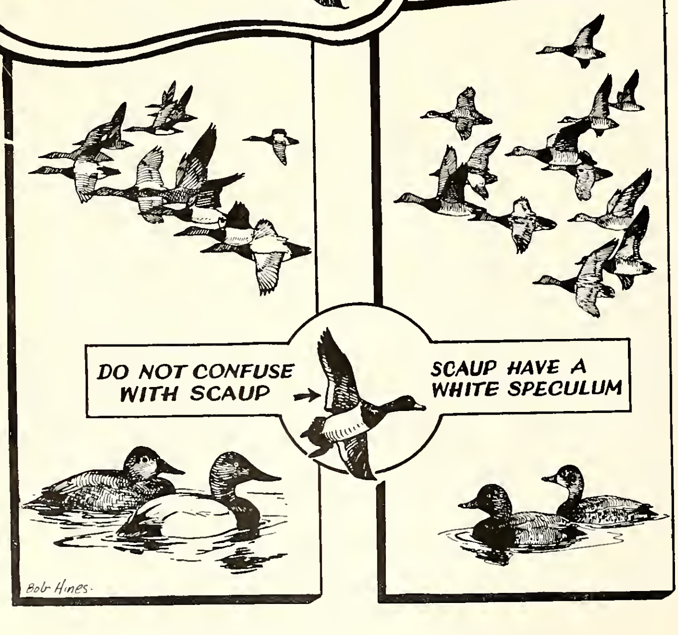
LIGHT CHEEK,
BLUISH BILL

HEN:
MOTTLED CHEEK
GRAYISH BILL

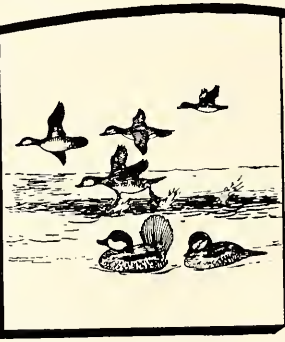
These Ducks
NEED HELP





DO NOT CONFUSE WITH SCAUP

SCAUP HAVE A WHITE SPECULUM



UNFAVORABLE CONDITIONS IN NORTHERN NESTING GROUNDS HAVE CUT THIS FALL'S DUCK SUPPLY. IN MOST SERIOUS TROUBLE ARE THE THREE SPECIES SHOWN HERE.

Gunners:

LET THE DUCKS COME IN CLOSE UNTIL YOU CAN IDENTIFY THEM, THEN, IF POSSIBLE, AVOID SHOOTING REDHEADS, "CANS," AND RUDDYS.

CHECK YOUR DUCK HUNTING REGULATIONS.